# FOREST *Insect* CONDITIONS and Proposed Control Program for 1955-1956

Southern Idaho, Utah, Nevada and Western Wyoming

## SPONSORSHIP STATEMENT

This report and the recommendations contained herein are made as a result of aerial surveys and "on the ground" cooperative surveys made by employees of the Intermountain Forest and Range Experiment Station, the Boise and Payette Forests of the United States Forest Service, Bureau of Land Management, the State of Idaho, Southern Idaho Timber Protective Association and the Lumber Industry of Southern Idaho. It is prepared and sponsored by the South Idaho Forest Pest Action Council composed of representatives of the following:

State of Idaho Department of Forestry

State of Idaho Land Department

Keep Idaho Green Committee

Southern Idaho Forestry Association

South Idaho Lumber Industry

Western Pine Association

Southern Idaho Timber Protective Association

United States Bureau of Land Management

United States Forest Service, Region 4

Intermountain Forest and Range Experiment Station

State of Idaho Fish and Game Department

## I. CURRENT FOREST INSECT CONDITIONS

Insect damage is severe in several localities. The largest infestations are found in southern Idaho where the spruce budworm and the Douglas-fir beetle are especially active in fir stands and in Utah where the mountain pine beetle and the Black Hills beetle are killing lodgepole pine and ponderosa pine. Other insects such as the southwestern pine beetle and the Engelman spruce beetle also are very destructive but they are more confined in extent.

However, there has been a general lessening of damage caused by pine engravers, the fir engraver, western pine beetle, and the pine butterfly. Recent control measures, especially the aerial spraying undertaken to destroy the pine butterfly and the spruce budworm in southern Idaho, have been effective in bringing about reduced damage.

Spruce budworm (Chorostoneura fumiferana, Clem.)

The spruce budworm began to increase in numbers in southern Idaho and other western states some six years ago. In the ensuing interval, many stands of fir timber have suffered heavy damage.

In 1955, 893,000 acres of budworm infestation were sprayed successfully in southern Idaho. This action saved countless thousands of trees which already had been seriously damaged by repeated defoliation. Although the spraying greatly reduced the infested area it was not possible to include all of the known spruce budworm infestations in a single project. Also, other infestations appeared this year for the first time.

Recently, surveys of susceptible timber stands were undertaken in southern Idaho in order to determine the location and severity of damage in unsprayed areas. It was found that 547,000 acres of infested fir and spruce remain which will require spraying in order to stem the present outbreak.

Douglas-fir beetle (Dendroctonus pseudotsugae, Hopk.)

Group killing of Douglas-fir caused by this insect increased sharply in 1954 on the Boise, Payette and Salmon National Forests. Because the foliage of infested trees often remains green for many months after attack, it is difficult to determine the amount of present losses. However, comprehensive air and ground surveys which were undertaken recently indicate that over a five-year period, losses were at their highest point during 1954. There is evidence that current losses are equally severe. At present, the most feasible way of controlling this insect would appear to be by means of salvage-logging of infested trees. Efforts are being made to intensify this method of control with particular emphasis on getting the logs out of the woods before the beetles emerge.

Black Hills beetle (Dendroctonus ponderosae, Hopk.)

Aggressive infestations have existed on the Dixie National Forest and Bryce Canyon National Park since 1949. Control measures have been applied annually since 1950. Reductions have been accomplished but infestations have appeared constantly in new areas. Natural control factors appear incapable of changing the course of the outbreak at present.

Engelmann spruce beetle (Dendroctonus engelmanni, Hopk.)

A serious outbreak which apparently developed from scattered blowdown was discovered this season on the Bridger National Forest in Wyoming. Six million board feet of spruce timber are infested. Steps have been taken to have the infested trees logged. Trap trees will be used at the periphery of the infestation to help contain the infestation prior to completion of the logging.

Mountain pine beetle (Dendroctonus monticolae, Hopk.)

A new outbreak has developed on the Teton National Forest in the Dell Creek area. It is estimated that approximately 3,000 infested lodgepole pine exist on about 1500 acres. The infestation is concentrated in fairly large groups and is very aggressive. Other lodgepole pine stands are threatened by the outbreak which is not far from Grand Teton and Yellowstone National Parks. Because logging cannot be effected in time, toxic oil sprays will be used.

Another mountain pine beetle outbreak has been causing considerable loss on the Wasatch and Ashley National Forests in Utah since 1941. Recent surveys indicate that the infestation increased in severity in 1954 and 1955.

Fir needle miner (Epinotia meritana, Hein.)

The fir needle miner is active in white fir on 10,000 acres of the Bryce Canyon National Park and the Dixie National Forest in Utah. Several attempts have been made to effect control but results have been inconsistent. Cooperative research is underway to determine a possible means of control.

Spruce mealybug (Puto sp.)

Some 60,000 acres of Engelmann spruce are infested with this unusual insect in Utah. The mealybug affects all sizes of trees causing branch and top killing and deformation of young stock and a weakening of sawtimber. The infestation is increasing in extent and severity. No control method is known as yet.

Southwestern pine beetle (Dendroctonus barberi, Hopk.)

The southwestern pine beetle continues to be active in ponderosa pine on the Charleston Mountain area of the Nevada National Forest. This is the only forested recreational area available to the people of Las Vegas who give it much use. Because the insect has several generations per year and new attacks occur throughout the summer, a continuing program of spotting and spraying is required. Approximately 350 trees should be sprayed during the spring of 1956.

## II. PROPOSED CONTROL PROGRAM

Four direct control projects involving an expenditure of Federal forest pest control funds are recommended for 1956. Three of these, involving the Black Hills beetle in Utah, the southwestern pine beetle in Nevada, and the mountain pine beetle in Wyoming constitute relatively small projects. However, the spruce budworm infestation in southern Idaho affects a large area containing a tremendous amount of timber. The control of the spruce budworm outbreak involves a large expenditure of funds and is made necessary by many considerations which are discussed in the following statements.

### Summary statement

An infestation of spruce budworm, which first became noticeable several years ago, continues to seriously threaten important and extensive stands of commercial timber on the Boise, Payette, and Salmon National Forests in southwest Idaho. Affected tree species constitute more than half of the total available timber supply on which the industry and general economy of the area depend. Administrators and technical personnel of public agencies, together with representatives of organized industry unanimously agree on the need and urgency for immediate corrective action to stem the present outbreak and prevent the re-invasion of portions of approximately 900,000 acres of spruce budworm that were successfully treated in 1955.

Losses directly attributable to the infestation already are significant. These losses can pyramid into devastating proportions unless the biological balance is restored. Nature eventually will perform the task of adjusting these widespread abnormalities. However, uncertainties regarding time required for nature's action strongly indicate the wisdom of direct control before the infestation is allowed to build up and become unmanageable, thereby resulting in great waste. The probability of re-infestation of areas treated and new areas not now infested can be minimized through treatment of all the remaining areas which are known to be seriously infested with the budworm.

The following summary tabulation outlines the over-all scope of the infestation:

| | Estimated Area* (Acres) | Estimated Volume* (M Ft. b. m) | Estimated Local Lumber Value* |
|---|---|---|---|
| Current losses | Damage very serious, losses confined primarily at present to young growth. | | |
| Immediately threatened | 547,000 | 4,567,450 | $ 319,751,500 |
| Ultimately threatened | 3,310,000 | 15,062,000 | 1,054,340,000 |

*(Idaho Wilderness Area included)

The estimated cost of treating 547,000 acres in 1956 is $601,700.

The Infestation

Since 1950 when the spruce budworm began developing into epidemic proportions in Southwest Idaho, it has been watched closely. Each year the infestation spread in acreage and severity and in 1955 a control program on 893,000 acres was successfully completed. Although this control project greatly reduced the infested area, it was not possible to treat all of the known spruce budworm in a single project.

Following the 1955 aerial spraying project a comprehensive survey was made to determine the location and severity of infestations in areas that were not treated. The survey showed the current extent of the 1955 infestation to be approximately 547,000 acres of fir and spruce with sufficient intensity of infestation to warrant treatment. This area supports 4,567,450,000 ft. b. m. of these species with a present stumpage value of $13,700,000 and a much more significant local lumber value of $319,751,500.

Most of the measurable damage has occurred in the areas of heavy budworm infestation where defoliation has been repeated for several successive years. In general, tree killing is confined to the understory of the stands although nearly complete kill of all age classes is noticeable in small patches or localities. It is estimated that approximately 10% of the sawtimber has been lost through tree mortality in areas of heavy infestation. Another year of defoliation could result in a larger infested area and much damage and tree killing in areas of severe defoliation.

## Impacts of Infestation

Losses can be expected to increase in the future if the infestation is not checked through natural forces or direct control measures. Without immediate control this infestation could threaten all of the fir and spruce stands in southern Idaho as well as re-invade the areas that were treated in 1955. Any significant reduction in the timber reservoir would have an extremely adverse effect on local communities dependent upon a lumber economy. In addition to the potential loss of timber values, the very important recreation and watershed resource would also be threatened.

Local industry is permanently organized to manufacturing mixed woods and markets for manufactured lumber of these species have become firmly established. Any practicable minimization of losses is important since the reduction of Federal timber supply could not be recovered because of the greatly increased dependence on the Federal timber supply. If the timber supply is diminished by insects the dependent communities will ultimately suffer.

## Proposed Project

At the present time there are approximately 547,000 acres of Douglas fir and true fir types on the Boise, Payette and Salmon National Forests that are infested seriously enough to warrant treatment. The infested areas occur as solid blocks of sufficient size to be considered as satisfactory control units. The area proposed for control includes a unit in the Idaho Wilderness Area which has been relatively isolated from the major infestation but which has now expanded in size and intensity so as to greatly threaten other mixed stands outside of the primitive area.

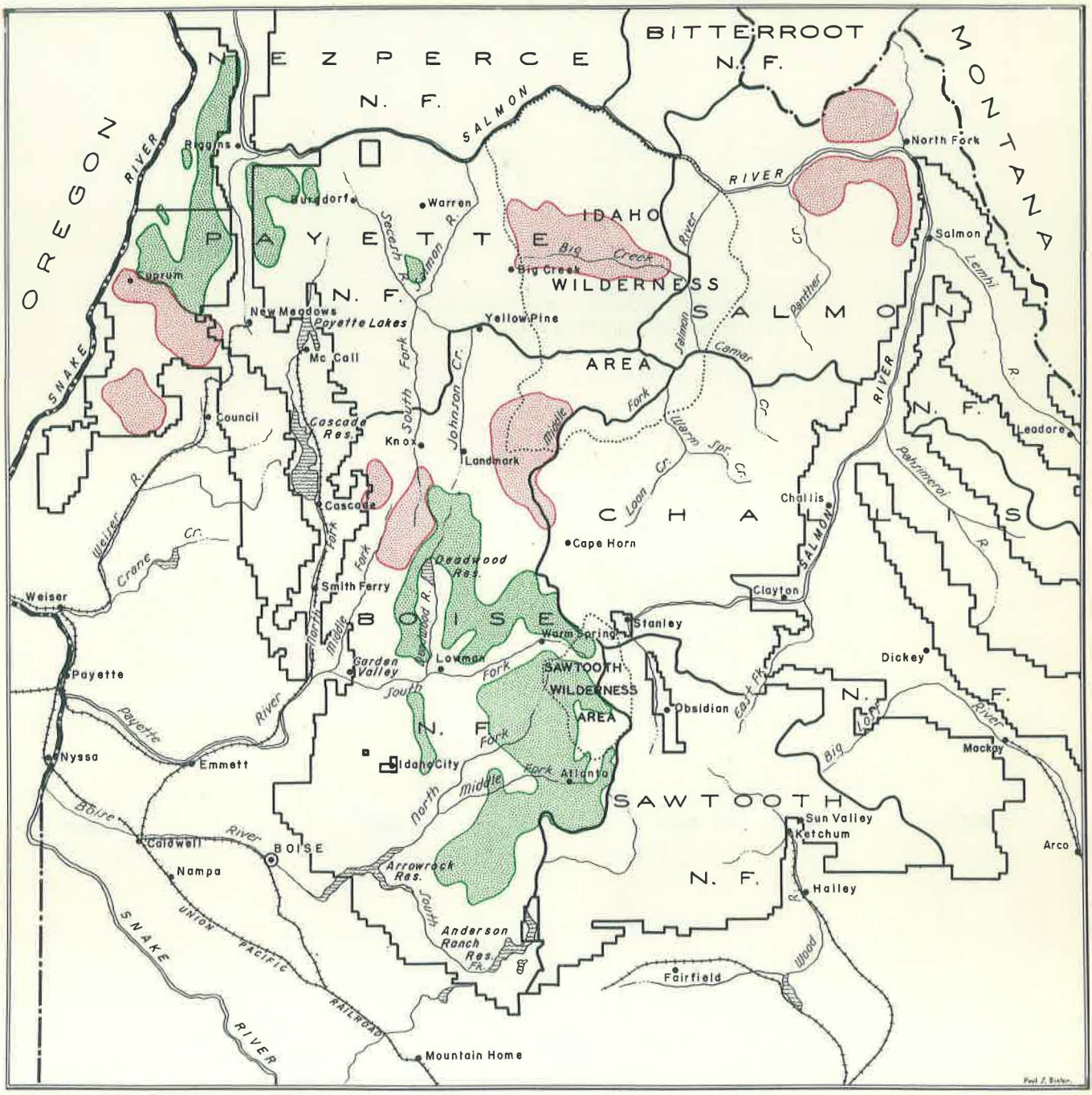
Estimated total cost of the project is $601,700. Approximately 14,000 acres of infested timber lands within the project boundaries are in non-federal ownership which are expected to bear their full share of treatment costs. The Federal cost will be $586,300 based on an average cost of $1.10 per acre.

This proposed project has been determined to be entomologically sound by management and research personnel of the Forest Service. The infested areas for which direct control is recommended are complete units where re-infestation from other untreated areas would not be expected. This project includes all of the remaining spruce budworm in southern Idaho that is now known to be sufficiently serious to warrant treatment.

Experience gained from spruce budworm control in other areas demonstrates that this insect cannot be completely controlled by direct measures but

by reducing the budworm population with direct control the natural control factors are able to build up sufficiently to restore a proper biological balance.

Local sentiment for the project is unanimously favorable. Fullest support and cooperation has already been offered or indicated from the State of Idaho Department of Forestry, State of Idaho Land Department, "Keep Idaho Green" Committee, Southern Idaho Forestry Association, State of Idaho Fish and Game Department, Southern Idaho Timber Protective Association, Idaho State Chamber of Commerce.




# SPRUCE BUDWORM CONTROL PROJECT

## SOUTHWESTERN IDAHO

BOISE, PAYETTE & SALMON NATIONAL FORESTS

1956

SCALE 0 10 20 30 40 MILES

LEGEND

CONTROL AREAS TREATED 1955.

PROBABLE CONTROL AREAS 1956.

U.S.F.S. OGDEN NOV. 1955.